

FINDINGS OF FACT

PROPOSED INTERSTATE 5 BRIDGE ACROSS COLUMBIA RIVER, MILE 106.4 BETWEEN PORTLAND, MULTNOMAH COUNTY, OREGON AND VANCOUVER, CLARK COUNTY, WASHINGTON

P(2-13-13)

APPLICANT

Columbia River Crossing
700 Washington Street, Suite 300
Vancouver, Washington 98660

Prepared by

Coast Guard, Office of Bridge Program

I. ADMINISTRATIVE EVALUATION

1. a. **Applicant's name:** Columbia River Crossing (CRC).
- b. **Date of application:** January 30, 2013 (initial), April 5, 2013 (complete).
2. **Navigability determination:** The Columbia River is a navigable water of the United States, in accordance with 33 CFR 2.36(a).
3. **Proposed bridge:**
 - a. **Date of plans:** Sheets 1 through 7 (of 7) dated 15 August 2013.
 - b. **Type of bridge:** Fixed highway bridges.
 - c. **Legal authority for proposed action:** The General Bridge Act of 1946.
 - d. **Dimensions of the navigation opening:**
 - (1) **Vertical clearance:** 116.0 feet minimum clearance above 0.00 Columbia River Datum (CRD) for the middle 300 feet in the proposed primary navigation span, and 100.1 feet minimum clearance above Ordinary High Water (OHW). The proposed alternate channel on the Washington side provides a minimum 83.9 feet above OHW. The proposed alternate channel on the Oregon side provides a minimum 98.0 feet above OHW.
 - (2) **Horizontal clearance:** 400.0 feet between fenders (rub rail) normal to axis of each channel. Each proposed navigation channel will be 300.0 feet wide.
 - (3) **Length of project:** 5,305 feet abutment to abutment.
 - (4) **Width of project:** Varies 196-265 feet out to out (total structure).
 - e. **Location of project:**
 - (1) **Waterway name:** Columbia River.
 - (2) **Milepoint:** Mile 106.4.
 - (3) **Name of nearest city and state:** Vancouver, Clark County, Washington.
 - f. **Purpose of project:** To build replacement bridges that will consist of two parallel, fixed-span structures carrying highway traffic, light rail transit, bicyclists, and pedestrians.

g. **Cost of low level bridge with only sufficient clearance to pass high water:**

A low level bridge at this location without navigation increment which would provide only sufficient clearance to safely pass flood waters and drift has not been considered for this project.

h. **Increase in project cost attributable to navigational clearances:** Accurate cost of bridge with 178.0 feet of vertical clearance verses 116.0 feet of vertical clearance has not been determined.

i. The estimated cost of the proposed bridge with 116.0 feet of vertical clearance is \$2.71B.

4. **Existing bridge:**

a. **Name of bridge:** Dual Interstate 5 Drawbridges.

b. **Milepoint:** Mile 106.5, Columbia River.

c. **Type of bridge:** Dual movable bridges each with three traffic lanes, light rail, and a bike/pedestrian lane.

d. **Operating regulations governing the drawbridge:** 33 CFR 117.869.

e. **Dimensions of vertical and horizontal clearances:**

(1) **Vertical clearance:** Lift span provides 178.9 feet above 0 CRD on the Columbia River Datum in the open-to-navigation position and 39 feet above 0 CRD on the Columbia River Datum in the closed-to-navigation position.

(2) **Horizontal clearance:** 263.0 feet measured normal to axis of channel.

f. **Date(s) of original permit and/or amendments, including issuing agency:**

One structure was completed in 1917. The Coast Guard has not located the original permit. It is likely that knowledge of the permit location is with the Army Corps of Engineers since it was the Secretary of War who likely permitted the bridge. The second structure was permitted by the Under Secretary of the Army. The location and plans for the companion bridge were approved on June 18, 1954.

g. **Extent of removal:** All parts of the existing to-be-replaced Interstate 5 Bridge across the Columbia River, mile 106.5, not utilized in the new bridge, which are located within the limits of the proposed navigational channels shall be removed down to a minimum of seven feet below the authorized navigational depth. All other parts located within the waterway shall be removed down to or below the mud line and the waterway cleared to the satisfaction of the District Commander. All parts located on land shall be removed to a minimum of two feet below the natural ground line. Such removal and clearance shall be completed when the District Commander determines that the construction of the new bridge, mile 106.4, has reached a point where such

action should be taken.

5. Present governing bridge or aerial structure on the waterway:

a. Identify structure governing horizontal clearance: BNSF Railroad Bridge.

(1) **Milepoint:** 105.6.

(2) **Horizontal clearance:** 200.0 feet of clearance on each side of the pivot pier.

b. Identify structure governing vertical clearance: I-205 Highway Bridge.

(1) **Milepoint:** 112.7.

(2) **Vertical clearance:** 144 feet minimum for the central 300 feet above 0.00 CRD.

6. Protests or complaints, if any, against existing bridges on the waterway: The Thirteenth Coast Guard District has received many complaints concerning the BNSF Railroad at mile 105.6 due to the close proximity of the Dual Interstate 5 Drawbridges. Mariners are required to make a hard turn to the right after transiting the highway bridge down bound followed by a hard turn to the left to become aligned with the railroad bridge opening located about 0.8 miles downstream.

7. Waterway characteristics:

a. Width of the waterway at bridge site: Approximately 2,700 feet.

b. Depth of the waterway at bridge site: The proposed bridge will be located just upstream of location where a maintained channel of 43 feet transitions to a authorized channel depth of 27 feet which is presently maintained to a depth of 17 feet.

c. Other limiting factors: None.

8. Summary of preliminary conferences and early coordination or scoping efforts with applicant and/or other interested parties:

- The U.S. Coast Guard (USCG) has been coordinating with CRC on this project since 2005. USCG accepted cooperating agency status in January 2006.
- On Sept. 21, 2006 USCG held a public hearing in Portland, Oregon. During the meeting General and Manson Construction Companies both stated their need for 125 feet vertical clearance with a possible need for 140 feet in the future.
- On May 2, 2008 Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) issued a Draft Environmental Impact Statement (EIS) for a fixed bridge with a 95 feet vertical clearance. USCG did not provide written comment.
- In Mar. 2011 USCG forwarded a letter to CRC from Thompson Metal Fab stating Thompson

Metal Fab's need for a minimum 125 feet vertical clearance.

- On Sept. 23, 2011 FHWA and FTA issued a Final EIS (FEIS) with a review period from Sept 23, 2011 to Oct 23, 2011. The locally preferred alternative in the FEIS proposed reducing vertical clearance at this crossing from the current 178 feet (lift-bridge) to 95 feet (fixed bridge).
- In Oct. 2011, USCG provided written comments to the FEIS, expressing concerns that the navigation issues of the waterway were not comprehensively addressed; therefore the USCG could not accept the FEIS as written.
- On Dec. 7, 2011 the Coast Guard Vice Commandant advised the Department of Transportation (DOT) Deputy Secretary of the USCG's concerns regarding the DOT's planned signing of a Record of Decision (ROD) that same day.
- On Dec. 7, 2011 FHWA/FTA issued a ROD. DOT formed a "Tiger Team" to work toward addressing the USCG's concerns.
- Feb. 2012, D13 Bridge Administrator started attending bi-weekly meeting held between CRC and USACE regarding the USACE 408 Permit.
- Mar. – Apr. 2012 A new navigational survey was completed and a comprehensive draft Columbia River User Data Report was developed. This draft report was circulated to the USCG in mid-April. The Tiger Team was tasked to develop an Impact Analysis, which was to include alternative heights and/or proposals to "avoid, minimize or mitigate" impacts to the maritime users.
- On Jun. 8, 2012 CG-5PW (Dana Goward) sent the FTA and FHA Administrators a letter summarizing the Coast Guard Bridge permitting responsibilities with respect to the FEIS.
- On Aug. 21, 2012 the CRC was added to the Federal Infrastructure Dashboard, with a permit decision target date of Sept 30, 2013. USCG /DOT commenced bi-weekly meetings in Washington, DC to collaborate on the project.
- On Sept. 10, 2012 the D13 District Commander sent a letter to the States of Oregon and Washington providing comments on the "Work Plan for Finalizing Bridge Height and Submitting Bridge Permit Application" emphasizing the need for CRC to consider the reasonable needs of navigation, and explain how CRC plans to avoid, minimize or mitigate those impacts to navigation.
- On Sept. 2012, Regional Principals of the USCG, FHA, FTA, CRC and the States of Washington and Oregon commenced periodic meetings in Seattle to collaborate on the project.
- On Oct. 23, 2012 CG-5PW (Dana Goward) sent a letter to FHA summarizing various issues surrounding the Navigation Impact Report and the CRC Project stating among other things that the Coast Guard continued to believe that mid-level heights could be problematic in

meeting the reasonable needs of navigation or obtaining a Coast Guard Bridge Permit.

- On Nov. 2, 2012 the DOTs for the States of Washington and Oregon jointly released the “Columbia River Crossing Navigational Impact Report” (NIR).
- By letter dated Dec. 6, 2012 the USCG advised CRC the analysis provided in the NIR required greater detail regarding future land use and impacted river users, specifically mitigation strategies for future upriver navigation.
- On Dec. 28, 2012 the DOT provided the "Columbia River Bridge Vertical Clearance NEPA Re-evaluation" report, proposed a new vertical clearance of 116 feet above 0 CRD.
- On Jan. 7, 2013 USCG acknowledged receipt of the NEPA reevaluation.
- On Jan. 30, 2013 the Thirteenth District Commander received the bridge permit application from CRC for a fixed bridge with a vertical clearance of 116 feet above 0 CRD.
- On Mar. 8, 2013 the Thirteenth District Commander notified CRC that additional information was required to continue the application review process.
- On Apr. 8, 2013 CRC provided additional information in response to the Thirteenth District Commander's March 8 letter.
- On Apr. 16, 2013 the Thirteenth District Commander met with upriver fabricators. Site visits included Thompson Metal Fab, Oregon Iron Work, Greenberry Industries, JT Marine, and Columbia Business Center.
- On May 6, 2013, the Coast Guard issued a Federal Register notice announcing a public comment period and two public meetings to solicit comments on navigational impacts of the proposed bridge.
- On May 7, 2013 the Coast Guard issued a public notice to solicit comments on navigation based upon CRC's preferred alternative with a bridge height of 116 feet.
- On Jun. 4 and 5, 2013 the Coast Guard held public meetings in Portland and Vancouver. Approximately 278 people attended the meetings with about 115 people providing oral comments.

9. Public Notification: Waterway Users: The Navigation Impact Report (NIR) dated November 2012 collected specific Navigational Information on over 250 vessels that either have or could potentially transit under the I-5 Bridge. The navigational requirements of metal fabricators and marine contractors were also surveyed.

Starting with 47 known waterway users, mailings requesting navigational user information were sent to owners having vessels longer than 45 feet and registered either in Multnomah, Clark or Skamania Counties. A total of 149 letters were mailed to registered users. In addition, 55 letters were mailed to members of the Pacific Northwest Steel Fabricators Association, and 51 letters were mailed to riverfront industrial property owners in the Columbia Industrial Park in Clark

County, Washington, and Multnomah County, Oregon, located upstream of the I-5 bridges. Public notices requesting navigation user information were also published in various newspapers and published in the USCG Local Notice to Mariners.

The identified vessels/users included commercial tugs and tows, recreational power and sail boats located at various marinas and yacht clubs, marine contractors, federal government, marine industries and passenger cruise vessels.

- a. (1) **Date of Public Notice:** Public Notice No. D13 01-13 dated May 6, 2013. Revised May 13, 2013 to change the closure date of the comment period to June 20, 2013 to match the Federal Register comment period closure date.
- (2) **Coast Guard One Page Public Notice mailed to adjacent property owners, waterway users, and other interested parties:** May 6, 2013.
- (3) **Date of Federal Register notice of availability and request for comments and notice of public meetings:** Federal Register/ Vol. 78, No. 87/Monday, May 6, 2013. Federal Register/Vol 78, No. 116/Monday, June 17, 2013 corrected the phone number for the person listed in the FOR FURTHER INFORMATION CONTACT section.
- (4) Date of Email Notifications to Federal and State elected officials of Oregon and Washington: May 6, 2013.
- (5) Date of Email Press Releases: May 7, 2013 Public Notice Press Release. May 31, 2013 Public Meeting Press Release.
- b. **Date of CG Local Notice to Mariners:** Week 19/13, dated May 07, 2013. Revised Week 20/13 to add information about how to use Adobe Reader. Revised Week 21/13 to change comment deadline from 19 June to 20 June to coincide with the Federal Register Notice.
- c. **Date of CG Public Meeting:** June 5, 2013 and June 6, 2013.

10. **Summary of views of governmental agencies, navigational interests or other interested parties:** See CG Comment Matrix dated August 2013 for this information.

II. NAVIGATIONAL EVALUATION

1. Do vessels engaged in emergency operations (i.e., law enforcement, fire, rescue, emergency dam repair, etc.), national defense activities (i.e., cruisers, fuel barges, munitions ships, etc.) or channel maintenance (i.e., dredges, dam and levee repair, etc.) operate on the waterway?
 - a. Vessels engaged in emergency operations and channel maintenance operate in the area. USACE Bonneville Lock and Dam is located at mile 145.5, Columbia River.

Four federal agencies, two state agencies, four local agencies, one port and one private organization were identified by the applicant as having vessels engaged in emergency operations, national defense activities or channel maintenance in the vicinity of the proposed bridge. See attachment C of the April 5, 2013 “Re-Submittal: Narrative Responses to Bridge Permit Application Guide” for further information.

Several comments expressed concern that the proposed bridge with a vertical clearance of 116 feet would adversely impact national security and/or limit future use of the river by the military:

See comments contained in Docket USCG-2013-0286 ID numbers 0014, 0077, 0141, & 0148.

As part of outreach, letters were sent on March 15, 2013 to the Office of Electricity Delivery and Energy Reliability at the Department of Energy, the Office of the Assistant Secretary of Defense for Homeland Defense & Americas’ Security Affairs, and the International Trade Administration at the Department of Commerce advising them of the proposal to construct a new bridge with a vertical clearance of 116 feet at 0 CRD. The letters specifically alerted them to the fact that this proposal could negatively impact the metal fabricators located up-river at the Columbia Business Center (CBC) and the “unique industrial capabilities” of CBC in general. We specifically requested their assessment as to whether they had interest or concern regarding the potential impact to this marine industrial capability. Follow-up letters were sent on May 7, 2013 providing the three Departments with a copy of the May 6, 2013 Federal Register Notice and the D13 Pubic Notice (01-13) and a second request for comment.

On 15 March 2013, D13 sent letters to the Department of Energy, Department of Defense and the Department of Commerce requesting their review and evaluation of the CBC’s “unique industrial capability” and the impact to the DOE if access to CBC is impacted by a proposed new bridge. The USCG requested responses by 15 April 2013. As of 26 September 2013, no response was received. No expressions of concern were received from either the Department of Energy, the Department of the Interior, or the Department of Defense.

While developing the protocols for the ship simulation, the USACE contacted the Military Sea Lift Command (MSC) to ascertain their usage of both the BNSF Rail Road Bridge and the I-5 Bridge. The USACE confirmed that the MSC vessels do not have any operational requirement to transit under either of these bridges and will therefore not be impacted by the proposed replacement bridge. Based on the input provided, the Coast Guard does not believe that the proposed bridge will have an adverse impact on National Security or on Military Sea Lift Command.

- b. There is no need to modify the vessels. The proposed bridge will provide a horizontal and vertical clearance for the safe and efficient passage of emergency vessels.

2. Has the USACE completed a federal navigation project on the waterway?
 - a. There are a series of connected federal navigation channels on the Columbia River starting at the entrance to the River at Astoria OR and extending upriver. The Primary Channels relevant to this bridge permit application are (all depths unless otherwise noted are referenced to Columbia River Datum):
 1. The Columbia and Lower Willamette River Project has a 43 feet deep navigation channel that extends from the mouth of the Columbia River to Columbia River Mile (CRM) 105.5. The available vertical clearance is generally 600 feet wide. The BNSF Rail Road Bridge is located just upstream of CRM 105.5.
 2. The authorized depth is 35 feet deep from CRM 105.5 to 106.5, the distance between the existing BNF railroad bridge and the existing I-5 highway bridge. This section includes the Upper Turning Basic which also has a 35 foot authorized depth. The horizontal clearance through the BNSF railroad bridge is 200 feet.
 3. The Vancouver to the Dalles River Project has an authorized channel of 27 feet deep and is generally 300 feet wide from CRM 106.5 to The Dalles, OR at CRM 189.7. This project is presently only maintained to 17 feet. An additional barge channel, 15 feet deep and 300 feet wide, from under the wide fixed span of the Interstate Bridge connects to the main channel about 7,500 feet upstream. An alternate barge channel 17 feet deep and 200 feet wide, under the high, fixed span of the Interstate Bridge, transitioning to 300 feet wide, connects to the main channel about 8,000 feet upstream.
 4. Two navigational locks are located at the Bonneville Dam at CRM 145.1. The 1993 Lock has an overall length of 675 feet and a beam of 86 feet with a controlling depth over the sill of 19 feet. The 1938 lock has an overall length of 500 feet and a beam of 76 feet with a controlling depth over the sill of 24 feet. The 1938 lock is currently closed to river navigation but remains a federally authorized project and could be re-activated by the USACE if there was demonstrated need.
 5. The Dalles Bridge at CRM 191.6 has a vertical clearance of 100 feet (Reference – Normal Pool, Elevation 72.3 feet).
 6. The Dalles Navigational Lock located at CRM 191.8 has a length of 675 feet, a beam of 86 feet with a minimum controlling depth over the sill of 15 feet.
 7. The Celilo Bridge located at CRM 201.2 has a vertical clearance of 75 feet in the open position (Reference – Max Pool, Elevation 163.4 feet).
3. Describe the present and prospective recreational navigation. Will the proposed bridge affect the safe, efficient movement of any segment of the present or prospective

recreational fleet operating on the waterway?

See the HQ Evaluation for further information.

4. Describe the present and prospective commercial navigation and the cargoes moved on the waterway. Will the proposed bridge affect the safe, efficient movement of any segment of the present or prospective commercial fleet operating on the waterway?

See the HQ Evaluation for further information.

- a. **Potentially Impacted Users:** Using information gathered in NIR, the Columbia River Vertical Clearance NEPA Re-Evaluation dated December 2012 identified 11 potentially impacted users of a bridge with a vertical clearance of 116 feet above Columbia River Datum (CRD). A vessel was determined to be potentially impacted if it could not pass under the bridge with a 10 foot air-gap (vertical clearance between the highest point of the vessel and the lowest point of the underside of the bridge) while the river water level is at 16 feet above 0 CRD. 16 feet above 0 CRD is the water level that was exceeded less than 2 percent of the time over the past 40 years.

The NEPA Re-Evaluation determined that the following 4 potentially impacted users would be unable to pass under the proposed 116 foot bridge under any water level and therefore considered them to be “Impacted”:

- Greenberry Industrial.
- Oregon Iron Works.
- Thompson Metal Fab.
- J.T. Marine Derrick Barge (DB) Taylor.

The NEPA Re-Evaluation determined that the following 5 potentially impacted waterway users could pass under the 116 foot bridge a substantial portion of the year with less than a 10 foot air gap. The NEPA Re-Evaluation therefore concluded that there was “no substantial impact” to these users.

- Advanced American Construction DB 4100.
- General Construction DB General.
- Port of Portland’s Dredge Oregon.
- USACE dredge Yaquina.
- SDS Lumber Company (future shipment)

The NEPA Re-Evaluation determined that although the following 2 users/vessels would be unable to pass under the 116 foot bridge at any time, they only had a “remote chance of being impacted.”

- Diversified Marine Derrick Barge (DB) Freedom.
- Schooner Creek Boat Works.

Section 10.3 of the CRC Bridge Application dated 30 January 2013 subsequently determined that the following 7 of 11 potentially impacted users could be accommodated by a 116 foot vertical clearance above 0 CRD if allowing for less than a ten foot air gap, and therefore no mitigation would be required:

- Advanced American Construction DB 4100.
- General Construction DB General.
- Port of Portland's Dredge Oregon.
- USACE Dredge Yaquina.
- SDS Lumber Company (future shipment).
- Diversified Marine Derrick barge (DB) Freedom.
- Schooner Creek Boat Works.

Section 10.3 of the CRC Bridge Application also concluded that the following four vessels/users have a need for some transits that would be too tall to pass under the 116 feet vertical clearance bridge:

- Greenberry Industrial (projected future shipment).
- Oregon Iron Works (projected future shipment).
- Thompson Metal Fab.
- J.T. Marine Derrick Barge (DB) Taylor.

Greenberry Industrial: The following information is provided in the NIR River User Data Sheet completed by Mr. Jason Pond of Green Berry Industrial on 03/27/2012. The required Air Draft to support operations is 165 feet. A desired Air Gap was not provided. They anticipate one annual one-way shipment under the I-5 Bridge for the next 30 years.

Greenberry Industrial provided the following additional comments to the Coast Guard:

Federal Register Docket USCG-2013-0286-0214 posted June 18, 2013 letter to D13 Bridge Administrator on March 1, 2013.

On 05/30/2013 Greenberry Industrial and the States of Washington and Oregon reached an agreement to mitigate impacts to navigation relating to the Columbia River Crossing Project. The signed agreement includes a condition that the Coast Guard Bridge Permit must include a condition requiring the performance of mitigation consistent with the signed agreement.

Oregon Iron Works: The following information is provided in the NIR River User Data Sheet completed by Mr. Thomas Hickman of Oregon Iron Works on 03/28/2012. Explicit Air Drafts and Air Gaps are not provided. However the following statements are included in the Data Sheet: "We have a current proposal to the US Navy to fabricate and ship structures that will require a minimum of 130 feet of clearance under the bridge. We have a marketing campaign going on now that

targets the oil companies working in Alaska. We believe that in the future there will be a need for platforms and modules that will again require a 150 foot minimum clearance”.

Oregon Iron Works provided the following additional comments to the Coast Guard:

Speaker #30 at 04 June 2013 Public Meeting in Portland, OR.

Speaker #18 at 05 June 2013 Public Meeting in Vancouver, WA.

Letter to D13 District Commander on May 31, 2013.

On 05/22/2013 Oregon Iron Works and the States of Washington and Oregon reached an agreement to mitigate impacts to navigation relating to the Columbia River Crossing Project.

Thompson Metal Fab Inc.: The following information is provided in the NIR River User Data Sheet completed by Mr. John Rudi of Thompson Metal Fab, Inc. on 01/05/2012. Required Air Drafts are 25-160 feet. The desired Air Gap is 20 feet. Anticipate one tall passage under the I-5 Bridge per year. Documented 6 instances over the past 13 years where the total required vertical clearance of a shipment exceeded 116 feet.

Thompson Metal Fab provided the following additional comments to the Coast Guard:

Federal Register Docket USCG-2013-0286-0225 posted June 26, 2013

Federal Register Docket USCG-2013-0286-0227 posted June 26, 2013

Speakers #4, #5, & #9 at 04 June 2013 Public Meeting in Portland, OR

Speakers #7 & #8 at 05 June 2013 Public Meeting in Vancouver, WA

Letter to D13 Bridge Administrator on March 28, 2011

Letter to D13 District Commander on January, 31, 2013

Letter to D13 District Commander on March 4, 2013

Letter to D13 District Commander on March 8, 2013

Letter to D13 District Commander on April 24, 2013

Letter to D13 Legal on June 19, 2013 providing additional proprietary and confidential business material to the Docket.

On 08/29/2013 Thompson Metal Fab and the State of Oregon reached an agreement to mitigate impacts to navigation relating to the Columbia River Crossing Project.

J.T. Marine Derrick Barge (DB) Taylor: The following information is provided in the NIR River User Data Sheet completed by Ms. Irene Toristoja of JT Marine on 03/22/2012. The Air Draft of the DB Taylor is 143 feet. The desired air gap is 10 feet. No information on the frequency of travel under the I-5 Bridge was provided. The Vessel Height Verification Sheet completed by Mr. Pete Geiger of CRC on 07/12/2012 reports a surveyed air draft of 131 feet.

On January 30, 2013 JT Marine sent a letter to D13 identifying themselves as a potentially impacted user and stating that they were in negotiations with CRC to modify the Taylor so that it could operate under the proposed bridge and stated that

the DB Taylor has an overall air draft of 131 feet.

On September 22, 2013 CRC sent a memorandum to the Coast Guard stating that JT Marine decided not to continue mitigation discussions and accordingly no mitigation agreement was reached with JT Marine.

Advanced American Construction DB 4100: The following information is taken from the NIR based on a phone conversation summary with Mr. Mike Johns of Advanced American Construction on 07/23/2012: The DB 4100 has an air draft of 92 feet. They require a 10 feet air-gap. It is reported in the NIR that the DB 4100 transits the Columbia River several times per year. Advanced American Construction was mailed a copy of the one-page public notice on May 06, 2013. They did not provide any direct communication to the Coast Guard regarding the impact of the proposed bridge on their operations or on the bridge permit application in general.

General Construction DB General: The following information is taken from NIR River User Data Sheet completed by Mr. Ralph Petereit of General Construction Co. on 2/27/2012. The DB General has an Air Draft of 93 feet. The desired air gap is 5-10 feet. The vessel transited under the I-5 Bridge several years ago to remove the crane from the derelict vessel Davy Crocket as well as load cargo at Thomson Metal Fab. There is no work scheduled that will require the vessel to transit under the I-5 Bridge. General Construction was mailed a copy of the one-page public notice on May 06, 2013. They did not provide any direct communication to the Coast Guard regarding the impact of the proposed bridge on their operations or on the bridge permit application in general.

Port of Portland's Dredge Oregon: The following information is taken from the NIR River User data Sheet completed by Mr. Mark Stillwell of the Port of Portland on 03/08/2012. The Dredge Oregon has an air draft of 103 feet with a desired air gap of 2 feet. The dredge made 6 transits under the I-5 Bridge during the past 30 years. Per the River User Data sheet, potential future transits under the bridge could be required if the Port wanted to place dredge material upland at the airport; if the dry-dock at Troutdale/Sundial is placed back in service and the Dredge went there for maintenance; or dredging near Hood River were undertaken. In a January 29, 2013 letter to the D13 Bridge Administrator, the Port declared their support for the proposed bridge, and stated that the Dredge OREGON could safely navigate under the new bridge by lowering its spuds 8 feet into the water. They considered this to be an acceptable solution. Other correspondence to the Coast Guard includes:

Speaker #36 at June 5, 2013 Public Meeting in Vancouver, WA

USACE Dredge Yaquina: The following information is taken from the NIR River User Data Sheet prepared by Ms. Marci Johnson of the USACE on 02/27/2012. The YAQUINA has an air draft of 92 feet with a desired air gap of 8 feet. The frequency of one-way passage underneath the I-5 Bridge is typically two per month with a peak of 4 in August and September. In a letter dated Feb 23, 2012 USACE informed CRC that to ensure safe passage of the YAQUINA, the minimum bridge height required for

current and future operational needs is 116 feet at 0 CRD.

Based on the Draft April 2013 Conceptual Staging Plan submitted by CRC the USACE has determined that the proposed bridge construction staging will prevent the Dredge Yaquina from operating up-river of the I-5 Bridge for approximately 27 months.

In an email dated 19 September 2013 to D13, the USACE regional office stated the following: "CRC's current proposal to construct the new I-5 bridge interrupts the USACE's current dredging maintenance operation for a 28 month period during construction. The USACE's dredge will not be able to navigate through the I-5 bridge location during that period. Currently, CRC has not finalized a mitigation plan with the USACE that ensures that the required maintenance dredging will continue uninterrupted during that time. The new bridge's impact to the Corps will only be during construction. Without a plan in place, the USACE's mission will be impacted and subsequently, the LCR users would be impacted by their inability to navigate between the I-5 bridge and Bonneville. We were working on a mitigation plan with CRC when we lost WSDOT funding and had to cease discussions. Once we have a new Intergovernmental Agreement in place with ODOT we plan on resuming discussions with CRC. The USACE is in negotiations with CRC to find a mutually acceptable way to mitigate this unacceptable impact on the ability of the USACE to perform required maintenance dredging during construction of the new bridge."

SDS Lumber Company: The following information is taken from NIR River User Data Sheet completed by Mr. Gary Collins on 3/13/13. The SDS Lumber Company owned tug DAUBY has an air draft of 55 feet with a desired air gap of 10 feet. The DAUBY currently transits under the existing I-5 Bridge 12 months per year with an average of 10 transits per month. They anticipate the possibility in the future of moving loaded barges with an air draft as high as 100 feet. SDS Lumber was mailed a copy of the one-page public notice on May 06, 2013. They did not provide any direct communication to the Coast Guard regarding the impact of the proposed bridge on their operation or on the bridge permit application.

Diversified Marine Derrick Barge (DB) Freedom: The following information is taken from the NIR River User Data Sheet completed by Mr. Kurt Redd of Diversified Marine on 02/17/2012. The largest required air draft to support their fleet of barges is 85 feet (top of spuds). The desired air gap is 10 feet. Frequency of one-way passage underneath the I-5 primary channel for their entire fleet of barges is approximately once per month, with a maximum of 4 during the month of February. However the "Vessel Height Verification Sheet" completed by Mr. Peter Geiger of the CRC on 2 July 2012 determined that the required Air Gap for the DB Freedom was actually 119 feet (top of crane) and that the DB Freedom, which was acquired in 2010, has never transited under the I-5 Bridge. The NEPA Re-Evaluation concludes that the DB Freedom could easily/safely navigate under the proposed 116 feet bridge at 0 CRD by lowering the boom onto a portable cradle. Diversified Marine was mailed a copy of the one-page public notice on May 06, 2013. They did not provide any direct communication to the Coast Guard regarding the impact of the proposed

bridge on their operations or on the bridge permit application in general.

Schooner Creek Boat Works: The following information is taken from the NIR River User Data Work Sheet completed by Mr. Steve Rander of Schooner Creek Boat Works on 01/15/2012. The information relates only to the Sail Vessel RAGE which is owned by Schooner Creek and does not address the overall operations of Schooner Creek Boat Works. The S/V RAGE has an Air Draft of 85 feet with a desired air gap of 5 feet. Frequency of one-way passage under the existing I-5 bridge is 4 times per month from March through October. The NEPA Re-Evaluation identifies preliminary plans by Schooner Creek Boat Works to construct a new sail boat with an Air Draft of 139 feet. The NEPA Re-Evaluation notes that Schooner Creek boat works is located down river of the proposed new I-5 Bridge.

Schooner Creek Boat Works provided the following additional comments to the Coast Guard:

Federal Register Docket USCG-2013-0286-0195 posted June 11, 2013.

Speaker #2 at June 4, 2013 Public Meeting in Portland, OR.

In this direct correspondence to the Coast Guard, Schooner Creek identifies themselves as an impacted and potentially burdened user. They note that they have built boats with mast heights over 120 feet and currently have a 135 foot mast that belongs to a vessel “destined to be built”.

Inland Sea Maritime, Schooner Creek Boat Works landlord, provided additional comments in Federal Register Docket USCG-2013-0286-226 posted June 26, 2013

Other Potentially Burdened Waterway Users: Through various documents and correspondence the Coast Guard has become aware of other waterway users or land owners who claim they will be negatively impacted by the construction of a replacement I-5 Bridge with a vertical clearance of 116 feet at 0 CRD.

- *Columbia Business Center (CBC) owned by Killian Pacific:* CBC is not a direct waterway user. However Thompson Metal Fab, Oregon Iron Works and Greenberry Industries are all current tenants of CBC. CBC leases space to other businesses and also owns the ocean barge loading facility and leases it on a daily basis to any business requiring this type of facility (not just too existing tenants at CBC). Killian Pacific is concerned that the construction of the proposed bridge with a reduced vertical clearance will limit its ability to attract new tenants willing to pay the prevailing rental rates and will permanently devalue their property. Two tenants at CBC (Grating Fabricators and Alliance Steel Distributors) expressed written concern to the Docket that a reduced vertical clearance bridge would adversely affect the existing industrial cluster and resulting synergy that exists between them and the large metal fabricators which are collocated at CBC.

In their analysis, CRC did not consider CBC a burdened user. In their June 18, 2013 Memo the States of Oregon and Washington conclude that: “Compensating riparian

landowners for diminution in property value due to navigational impediments from a federally-permitted bridge downstream would be unprecedented and deviate markedly from the substantial body of law defining the contours of federal authority over interstate navigation.”

Other Relevant Correspondence:

Speaker #7 at the June 4, 2013 Public Meeting in Portland, OR.

Speaker # 14 and #26 at the June 5, 2013 Public Meeting in Vancouver, WA.

Federal Register Docket USCG-2013-0286-0193 posted June 20, 2013.

Federal Register Docket USCG-2013-0286-0194 posted June 20, 2013.

Federal Register Docket USCG-2013-0286-0227 posted June 26, 2013.

Federal Register Docket USCG-2013-0286-0235 posted June 26, 2013.

Letter from Killian Pacific to CG-5P dtd January 9, 2013.

Letter from Killian Pacific to D13 District Commander dtd May 21, 2013.

Letter from Schwabe, Williamson & Wyatt to D13 District Commander dtd May 21, 2013.

Letter from Schwabe, Williamson & Wyatt to D13 Legal Officer dtd June 19, 2013 providing additional proprietary and confidential business material to the Docket.

- *Legendary Yachts Inc:* The following information is taken from the NIR River User Data Sheet completed by Mr. Pat Scott of Legendary Yachts, Inc. on 03/128/2012. The air draft for Sailing Vessel Radiance is 86 feet. The desired air gap is 3 feet. Frequency of one-way passage underneath the I-5 main channel is typically 8 times per year from June through September. At the Public Meeting Legendary Yacht expressed concern that the Radiance will not be able to pass under the proposed bridge during certain water conditions and especially during the construction period. Legendary Yacht also expressed concern about the impact of the bridge if they were to build larger sailboats in the future.

Relevant Correspondence:

Speaker #13 at June 5, 2013 Public Meeting in Portland, OR.

Memorandum from Columbia River Crossing Project to USCG dated Sept. 22, 2013.

- *Houston Equities:* Houston Equities owns 40 acres of industrially zoned property with permitted dolphins in Cascade Locks, OR. The property is currently used as a rock quarry but in the future could be repurposed as a manufacturing site requiring river transport of finished product. No specific future business plan or required air gap is identified.

Relevant Correspondence:

March 25, 2013 letter to D13(m).

Last Commenter at 4 June, 2013 *Public Meeting in Portland, OR (no speaker # assigned)*.

Memorandum from Columbia River Crossing Project to USCG dated Sept. 22, 2013.

- *Hidden Family*: Assert that they own 130 acres of property and tidelands that was previously leased to the US Maritime Administration for construction of the Kaiser Shipyard, and is now leased to Gilmore Steel Corp. The lease apparently expires in 2030. They state that a bridge lower than the current 178 foot bridge would block their property for large product and ship movements. They further state that if the future bridge restricts the use of their property that they expect compensation.

Relevant Correspondence:

Letter from Mr. William Hidden to D13 (dpw) dtd June 3, 2013.

Letter from Mr. Oliver Hidden to D13 (dpw) dtd June 18, 2013.

Speakers # 3 and #77 at June 5, 2013 Public Meeting in Vancouver, WA.

Memorandum from Columbia River Crossing Project to USCG dated Sept. 22, 2013.

Interviews conducted with the Columbia River Pilots and the Port of the Dalles personnel during the preparation of the May 2013 DRAFT Proposed Ship Simulation Study identified other historical waterway users who may not have been able to transit under the proposed I-5 Bridge. These include:

- A ship previously called at Port of the Dalles to load live cattle for transport to Japan.
- U.S. Navy ships participated in various festivals held at The Dalles.
- Several heavy lift ships transited to Pasco in 1983 to deliver Lamson cranes used for nuclear plants downstream.
- An oil exploration ship surveyed the river by deploying an array.
- Navy ships called at Sundial Marine in Troutdale, OR.

b. Future Use of the Waterway:

The authorized navigational draft of the Columbia River from just outside the bar at Astoria, OR to the Ports of Portland and Vancouver is 47 feet below 0 CRD. The authorized navigational draft of the river from Vancouver to the Port of The Dalles is 27 feet below 0 CRD, although this section of the river is only currently maintained to a draft of 17 feet. The I-5 Bridge is located at the start of this shallow draft section of the River. With a 27 feet authorized draft, an ocean going vessel with a draft upwards of 25 feet and ocean going barges identical to those used by Thompson Metal Fab to transport their height restricted cargos could safely navigate portions of the river upriver from the proposed I-5 Bridge.

However existing bridges and navigational locks upriver from the proposed I-5 bridge would further restrict the size and movement of future river traffic. The Dalles Bridge at River Mile 191.6 has a vertical clearance of 100 feet. The 1993 Bonneville Navigational Lock at River Mile at 145.5 has an overall length of 675 feet and a beam of 86 feet with a controlling depth over the sill of 19 feet. The 1938 Lock has an overall length of 500 feet and a beam of 76 feet with a controlling depth over the sill of 24 feet. The 1938 lock is currently closed to river traffic but remains a federally

authorized project and could be re-activated by the USACE if there was demonstrated need.

The May 2013 DRAFT Proposed Ship Simulation Study evaluated the physical constraints of the upper river area and determined that the representative vessel to be used for the ship simulation should be a product carrier with a 452 feet length and a beam of 75.5 feet. The Air Draft of this representative vessel when loaded to a draft of 25 feet would be 104 feet. The Air Draft of this vessel when ballasted would be 111 feet.

The Draft Proposed Ship Simulation Study also analyzed the dimensions of ships that actually called at the Glacier Terminal in Portland, OR. over the past year and determined that the typical vessel with a 25 feet draft would have a corresponding Air Draft of 92.5 feet.

Section 7.4 of the Navigation Impact Report discusses the potential impacts to future land and waterway users. The bridge applicant examined all up-river sites with the potential for water-dependant development, and owners or controlling agencies were contacted to determine future plans. Section 7.4.2 also provides a brief future vessel analysis.

Section 3.3 of the NEPA Re-Evaluation, using information taken from the NIR, provides a further discussion of future changes in land use that could affect navigation. Section 3.3.3 - Summary of Redevelopment Opportunity states: "Within the project area, there are undeveloped and potentially re-developable sites along the Columbia River, which are zoned for industrial and other uses that could generate marine traffic that requires varying navigational clearances. There are sites that have existing marine infrastructure, such as lumber mills, which could also redevelop with different water dependent uses in the future and that could use the existing marine infrastructure. There are no known planned developments that would significantly increase the height-constrained activities in the affected area. Efforts are underway in upriver counties to reuse vacant and underutilized industrial waterfront parcels in forest projects manufacturing (which is not height constrained) or in non-water dependent uses, including commercial business parks, mixed use residential/commercial developments and tourists centers." After additional discussion, the section concludes by stating: "In conclusion, there are no reasonably foreseeable impacts to up-river future commercial land use development opportunities that would be constrained by the proposed 116-foot bridge."

Section A.2.8.1 of Appendix A of the NIR identified Sundial Marine in Troudale, OR as a past user of the waterway from 1970 to 2011. Sundial Marine ceased operations in 2011. Sundial Marine owned by Tidewater Barge Line and focused on the maintenance of barges, tugs and fishing vessels. They also constructed small fishing vessels, tugs and barges including double hulled petroleum barges for the Navy.

Interviews conducted with the Columbia River Pilots during the preparation of the May 2013 DRAFT Proposed Ship Simulation Study suggest Navy ships use to call at

Sundial Marine. There is also anecdotal information that over the years Coast Guard cutters, including 180 foot Ocean Going Buoy Tenders, 210 feet Medium Endurance Cutters, and the 399 feet Polar Ice Breaker all had dockside maintenance performed at Sundial Marine. The Polar Ice Breaker has an Air Draft of 138 feet.

Sundial Marine included approximately 26 acres of land with 1,200 feet of pier space, a 248 foot floating drydock (2,100 ton capacity), and a 300-foot by 65-foot end launch building ways. In 2012 Sundial Marine sold much of the equipment and tools.

Appendix B-1 of the NIR includes information surrounding the possible permanent moorage of the USS Ranger, an aircraft carrier that will be permanently decommissioned and transferred to a non-profit organization in 2014. The USS Ranger Foundation has developed a proposal to permanently moor the vessel at Chinook Landing Marine Park, in Fairview, OR (approximately 14 miles upriver from the proposed I-5 Bridge). The Ranger has an approximate air draft of 123 feet a beam of 250 feet with a draft of 30 feet. The beam of the vessel would require the temporary removal of the BNSF RR Bridge. The proposed bridge would preclude the one-time transit of the Ranger to the proposed homeport.

The Columbia Business Center (CBC), owned by Killian Pacific, has already been identified as a potentially burdened user. As noted previously, the three existing metal fabricators who are current tenants of CBC have all entered into mitigation agreements with the State of Oregon to compensate them for the lost profit resulting from the reduced clearance of the proposed bridge.

In addition to the potentially burdened waterway users specifically identified previously, the Coast Guard received approximately 115 comments expressing general concern that the proposed bridge with a vertical clearance of 116 feet at 0 CRD would unreasonably limit the future navigation and economic development of the river. However no specific examples of planned or proposed facilities or initiatives were provided. A recurring theme from many of the commenters was that it is impossible to predict future industrial and shipping trends, but that it would be short-sighted to ignore the future potential of the river. Many also commented that the new bridge should be no lower than the nearby I-205 Bridge.

Speaker # 25 at the June 5, 2013 Public Meeting held in Portland, OR identified port calls by various tall ships as a potential future use of the river that would be impacted by the proposed bridge. The U.S. Coast Guard training barque EAGLE with an Air Draft of 147 feet and the HMS Surprise with an Air Draft of 130 feet were specifically mentioned.

The following specific comments are representative of this public concern:

Federal Register Docket USCG-2013-0286 submittal #'s 0055, 0060, 0072, 0075, 0091, 0174, 0189, 0195, 0201, 0205, 0232, 0237, 0241, 0244.

Speakers #18, 27, 28 & 31 at June 4, 2013 Pubic Meeting in Portland, OR
Presenters #32, 55, 56 & 62 at June 5, 2013 Pubic Meeting in Vancouver, WA.

At least three individuals provided comment that there was no foreseeable or reasonable development potential up-river of the proposed bridge.

Federal Register Docket USCG-2013-0175 & 0248

Speaker # 42 at June 4, 2013 Pubic Meeting in Portland, OR.

5. Will the proposed bridge block access of any vessel presently using local service facilities i.e., repair shops, parts distributors, fuel stations?

The proposed bridge will not block access to any vessel servicing facilities in vicinity of the proposed bridge site.

6. Are alternate routes bypassing the proposed bridge available for use by vessels unable to pass the proposed bridge?

There are no bypass routes in the vicinity of the proposed bridge site.

7. Will the bridge prohibit the entry of any vessels to the local harbor of refuge?

The proposed bridge will not prohibit any vessel's entry to the local harbor of refuge.

8. Will the proposed bridge be located within one-half mile of a bend in the waterway?

The proposed bridge is within one-half mile of a bend in the waterway. There is sufficient distance between the proposed bridge and the bend to allow proper vessel alignment for the safe, efficient passage of vessels.

9. Are there other factors (i.e., dockages, lightering area, existing bridges, etc.) located within one-half mile of the proposed bridge which would create hazardous passage through the proposed structure?

- a. **Navigation Safety during Construction:** The USACE intends to perform a computer ship simulation to determine the impact on the navigation channel(s) during and after construction of the proposed project. A more complete description of the protocols and design of the ship simulation can be found in the CRC Draft 408 Ship Simulation Design Vessel Memo dtd May 21, 2013. The Coast Guard intends to review the results of this simulation to assure adequate navigational safety is maintained during construction. For example, tug assist or additional Aids to Navigation may be required to assure safe transit during periods when the horizontal clearances of the available channels are reduced. The waterway users will be kept fully apprised of navigational channel closures and restrictions through timely issuance of Coast Guard Broadcast Notice to Mariners and Local Notice to Mariners. Several commenters noted that the CG should not permit the bridge without benefit of the ship simulation.

Construction Impacts to Navigation and Waterway Users: The current I-5 bridge consists of three separate navigational channels: Primary Channel (263 feet

Horizontal & 178 feet Vertical); Barge Channel (511feet Horizontal & 58 feet Vertical); and Alternate Barge Channel (260feet Horizontal & 72 Vertical). The proposed new I-5 Bridge will also provide three separate navigational channels: North Alternate Channel (300 feet Horizontal & 100 feet Vertical); Primary Channel (300 feet Horizontal & 116 feet Vertical); and South Alternate Channel #2 (300 feet Horizontal & 114 feet Vertical). All referenced vertical clearances are at 0 CRD. The Draft April 2013 Conceptual Staging Plan submitted by the Bridge Applicant (as modified by email received from Ms Heather Wills of the CRC on 09/11/2013) describes in detail how the navigational clearances of these various navigational channels will be impacted during the expected 5 year construction period.

In summary, during all 5 years of construction activity at least one of the channels, but often two, will remain available for navigation although with varying degrees of horizontal and vertical constraints. The three most restrictive periods with respect to vertical clearance are projected to be:

- 21 months when both barge channels will be completely blocked requiring a bridge lift for any vertical clearance greater than 39 feet above 0 CRD.
- A one month period where the maximum available vertical clearance will be 72 feet above 0 CRD with a horizontal clearance of 200 feet.
- 27 month period where the maximum available vertical clearance will be 100 feet above 0 CRD with a horizontal clearance of 150 feet.

Horizontal restrictions, varying from 150 feet to 200 feet will exist for the duration of the construction. In an April 15, 2013 letter to CRC, Tidewater Barge lines stated that their primary concern with the project relates to the reduced horizontal clearance of the channel during the construction phase. They recommended that in addition to intensive and on-going communication with the tow boat operators during this time, CRC should also consider the addition of a standby or assist tug in the construction area to facilitate safe navigation in the constricted water way.

As already noted, during 27 months of construction, the USACE Dredge Yaquina will be unable to transit under the proposed bridge to perform maintenance dredging. The Coast Guard also received comments from Schooner Creek Boat Works, Legendary Yachts, and Bernert Barge Lines expressing concerns about the reduced navigational clearances during construction and the potential impact on navigation and/or their businesses.

These comments can be found at:

Federal Register Docket USCG-2013-0286-195 posted June 11, 2013.
Speakers #2 and #38 at June 4, 2013 Public Meeting in Portland, OR.
Speaker #13 at June 5, 2013 Public Meeting in Vancouver, WA.
Letter from Tidewater Barge to CRC dtd April 15, 2013.

10. Do local hydrologic conditions (i.e., wave chop, cross currents, tides, shoals, etc.)

increase the hazard of passage through the bridge?

The Columbia River can change elevation more than 20 feet in a year due to seasonal rains. Prudent seamanship is all that should be necessary to safely navigate the proposed bridge structure.

11. Do local atmospheric conditions (i.e., strong, prevailing winds, fog, rapidly developing storms, etc.) increase the hazard of passage through the bridge?

Local atmospheric conditions do not increase navigational hazards at the bridge site. Sight distance is also occasionally reduced by fog. Prudent seamanship is all that should be necessary to safely navigate the proposed bridge structure.

12. Have guide clearances been established for the waterway? Yes.

a. Minimum horizontal guide clearance: See below table.

b. Minimum vertical guide clearance: See below table.

	Bridge Type	Horizontal	Vertical	Datum
Mouth to BNRR Bridge at Vancouver	Fixed	1,000 ft.	180 ft.	25ft. on Portland gauge.
BNRR Bridge at Vancouver mm105.6 to Dalles	Fixed	450 ft.	135 ft.	600 kf PS stage.
Dalles to Kennewick, Mile 328	Fixed	400 ft.	60 ft.	2 pct flowline.

c. New Limiting Vertical Clearance

Many commenter's expressed concern that the proposed I-5 replacement bridge with a vertical clearance of 116 feet at mile point 106.4 would become the new limiting vertical clearance until reaching The Dalles Bridge at River Mile 191.6. Many of these commenter's suggested that the new I-5 Bridge should have at a minimum the same vertical clearance as the Glenn Jackson Bridge. The I-205 Bridge located approximately 6 miles upstream (River Mile 112.7) which has a vertical clearance of 144 feet.

Docket comment USCG-20136-0286-0205 from Representative Jaime Herrera Beutler asked the following: "When the Glenn Jackson Bridge was permitted, the analysis determined that a clearance of 144 feet. would be required in order to ensure that navigation wouldn't be impeded on the Columbia River." Have the standards for river navigation changed? If not, can you explain how a clearance of 116 feet complies with the finding for the Glenn Jackson Bridge?

ANSWER: The standards for river navigation have not changed. The vertical and horizontal clearances of a bridge are determined by the reasonable needs of existing and future navigation. A review of the November 1976 Findings of Fact for the I-205 Bridge along with the bridge plans reveals that topography apparently established the vertical clearance for the I-205 Bridge. Section 11 of the Findings of Fact state: "The main channel crossing gradually rises from a fill on Government Island near the center of the river bed to a high point of land on the north shore. At this location the roadway surface ties into a natural upgrade of the connecting road. The gradual rise of the bridge naturally provides the necessary vertical clearance for the main navigation channel." There are no explicit statements or discussion of what the required vertical clearances were for existing or future vessel traffic. Nor is there any indication that a higher or lower bridge was even considered. However the Findings of Fact does document concern expressed by the maritime community over the proposed horizontal clearance of the bridge.

13. State any other factors you consider necessary for the safe, efficient passage of vessels through the bridge? Navigation Safety Concerns.

a. Several comments expressed safety and navigational concerns over the proposed 18 percent reduction in the size of the Turning Basin that is located in-between the BNSF Bridge and the proposed I-5 Bridge. See comments contained in Docket USCG-2013-0286 ID numbers 0101, 0197, 0200 & 0204 and Speaker #1 at the June 4, 2013 Public Meeting in Portland, OR.

b. Several comments described safety concerns regarding the alignment between the BNSF Rail Road Bridge and the existing and proposed I-5 Bridge. See comments contained in Docket USCG-2013-0286 ID numbers 0055, 0162, & 0236 and transcript of the June 4, 2013 public meeting in Portland, OR.

ANSWER: At the request of the Coast Guard, CRC provided a detailed analysis on the navigational impacts associated with an 18 percent reduction in the size of the turning basin and the associated realignment of the three navigational channels. (Navigation Channel and Turning Basin Report dated April 17, 2013). CRC conducted meetings and interviews with the Ports of Vancouver & Portland, the Columbia River Tow Boat Association, individual Barge lines, the Columbia River Pilots and Lafarge cement which has a loading facility just up-river from the BNSF railroad bridge.

The turning basin was established in 1932 apparently to allow adequate room for T-2 tankers to be turned or rotated 180 degrees in place. Per the CRC Report, and as substantiated by the participating marine industry members, the turning basin has not been used to actually turn large vessels for over 30 years, however ocean going barges are sometimes turned in the turning basin (see discussion below regarding Lafarge Cement Terminal). The current practical purpose of the turning basin is to allow tugs and barges and perhaps other vessels room and time to maneuver, left or right, in order to make a straight approach under the next bridge span. This "S Turn" maneuver is required by a tug and barge to maneuver through the single opening of the BNSF Bridge and to line up for a transit through either the Barge Channel or Alternate Barge Channel under the

existing I-5 Bridge. By performing the “S-Turn” maneuver a tug and barge can avoid using the primary channel which requires a lift of the I-5 moveable span. This maneuver cannot be performed safely during period of high water flow.

The proposed alignment of the three navigational channels under the proposed bridge will largely eliminate the requirement for a tug and barge to perform the “S Turn” maneuver because the opening of the BNSF rail road bridge will predominantly be in line with the opening of the new North Alternate Channel. The proposed North Alternate Channel has a Vertical clearance of 100 feet at 0 CRD with a horizontal clearance of at least 300 feet. Most tugs operating on the Columbia River require a 57 feet clearance above 0 CRD. In an April 16, 2013 letter, the Columbia River Towboat Association provided the following comment: “The proposed reduction in the size of the turning basin will have no impact on our current or anticipated future tug and barge operations.” “It is our understanding that each of the three channels will have a minimum width of 300 feet, and vertical clearance ranging from 96-116 feet above 0 CRD. With the proposed clearance, and the improved alignment of the channels with the downstream BNSF bridge opening, we believe that the changes represent a definite improvement in safe navigation for the towboat community.”

Lafarge Cement Terminal is located just downriver of the Turning Basin and immediately upriver of the BNSF railroad bridge. Ocean going barges with drafts of 20 feet routinely dock at this terminal. After unloading, they either back downriver with the current until downstream of the BNSF railroad bridge and then turn; or proceed upstream in the Turning Basin and then turn in the downstream direction.

As previously noted, the turning basin was designed to turn a T-2 tanker. The T-2 tanker has a length of 572 feet and beam of 75 feet. The dimension of the largest ocean going barge that currently calls at Lafarge is 352 feet long with a beam of 82 feet. The original turning basin is 800 feet wide and 2,000 feet long. The proposed turning basin remains 800 feet wide but is reduced in length to 1,500 feet. The proposed reduction in length of the turning basin will have no practical impact on the ability to safely turn the ocean going barges that currently call at Lafarge.

The Lafarge terminal manager provided input to the Turning Basin Report and stated that if the economic conditions in the area change, they could possibly use a deep draft vessel to bring cement to their terminal. This vessel could have a draft up to 35 feet with a length of 504 feet. If this type of vessel were to call at Lafarge it would likely use the turning basin to turn in the downstream direction. Preliminary calculations completed by CRC using USACE criteria indicate that depending on river current conditions, this maneuver may require the assistance of one or more tugs. The proposed ship simulation model will further evaluate if this potential future vessel can be safely turned in the revised turning basin.

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Non-Navigation Issues:

Over 250 comments were received regarding the proposed bridge for a variety of reasons unrelated to river Navigation or Environmental Impacts. These comments included concerns about:

- Inclusion of light rail on the bridge.
- Collection of tolls.
- Cost of the project.
- Roadway congestion.
- Roadway Safety.
- Impact on rail and truck freight.
- Pedestrian and bicycle impacts.

III. ENVIRONMENTAL EVALUATION

See CGHQ Evaluation for this information.

IV. STRATEGIC GOALS, PRIORITIES AND CONTRIBUTIONS

1. The CRC provided an Economics Report that estimated the value of height constrained shipments by barge generated by fabricators located at the Columbia Business Center to range in value from \$0.0 per year (low) to \$62.3 million per year (high) or a nominal value of \$161.1 million for the 11 year period between the years of 2002 and 2012.
2. **Safety:** The proposed bridge and channel alterations will be compatible with safe navigation on the Columbia River.

Protection of natural resources and the human environment: The proposed bridge will not have an adverse impact on the environment, federal endangered species, cultural resources or other natural resources. The project is in compliance with federal environmental control laws.

Mobility and economic growth and trade: The project will be compatible with mobility concerns. The bridge will not obstruct the free movement of vessels on the Columbia River. The bridge will support the economic development goals of the region.

Maritime Security: The bridge project will have a neutral impact on maritime security issues.

National defense: The proposed bridge project will support national defense goals and will facilitate movement of strategic supplies during times of national emergency.